Space Weather Forecast

Issued on Friday, 25 February 2022 at 12:26 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

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Space Weather Forecast Headline: Very low chance of G1/Minor Storm and R1/Minor radio blackouts.

Analysis of Space Weather Activity over past 24 hours
Solar Activity: Solar activity is very low with just two small and simple active regions on the visible disc, and no significant flares. No Earth-directed Coronal Mass Ejections (CMEs) were observed in the available imagery during the past 24 hours.

Solar Wind / Geomagnetic Activity: The solar wind initially showed waning effects from a coronal hole fast wind, before the apparent weak arrival of another coronal hole fast wind. The wind speed was initially near 470 km/s, declining to around 400 km/s by 24/2200 UTC, then increasing again to reach 440-480 km/s since 25/0500 UTC. The Interplanetary Magnetic Field was initially very weak, but increased steadily to reach close to moderate levels for a time. The north-south component varied weakly. Resultant geomagnetic activity was Quiet to Unsettled (Kp 0-3).

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) is currently at background levels with no solar radiation storms observed.

Four-Day Space Weather Forecast Summary
Solar Activity: Solar activity is forecast to be very low, with a slight chance of Common class flares. Risk of Moderate class flares is very low currently, but with a slight increase as new regions rotate onto the disc in the coming days.

Solar Wind / Geomagnetic Activity: No Earth-directed CMEs are forecast. Three coronal hole fast wind connections are expected during this period, with winds likely to reach around 500km/s at times. Geomagnetic activity is expected to be Quiet to Unsettled, with a chance of Active periods, and a very slight chance of G1/Minor Storm intervals.

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) is expected to remain at background, with no solar radiation storms expected through the period.

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Geomagnetic Storms:

Geo-Magnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	No	5	5	5	5
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 M Class	No	2	3	5	5
Very Active	R3 to R5 X	No	1	1	1	1

Solar Radiation Storms - (High Energy Protons):

Radiation Storms Probability (Exceedance)	Level (cm^{-2} sr^{-1} s^{-1})	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	1	1	1	1
Very Active	≥ S3 *	No	1	1	1	1

* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)

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